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**Sent:** Thur 1/5/2017 4:30:51 PM (UTC)  
**Subject:** FW: Dewey Burdock project takes another step forward  
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**From:** Shea, Valois  
**Sent:** Thursday, January 05, 2017 8:28 AM  
**To:** Minter, Douglas <Minter.Douglas@epa.gov>  
**Subject:** FW: Dewey Burdock project takes another step forward

From Brian Walsh

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**From:** Walsh, Brian [<mailto:Brian.Walsh@state.sd.us>]  
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**Subject:** FW: Dewey Burdock project takes another step forward

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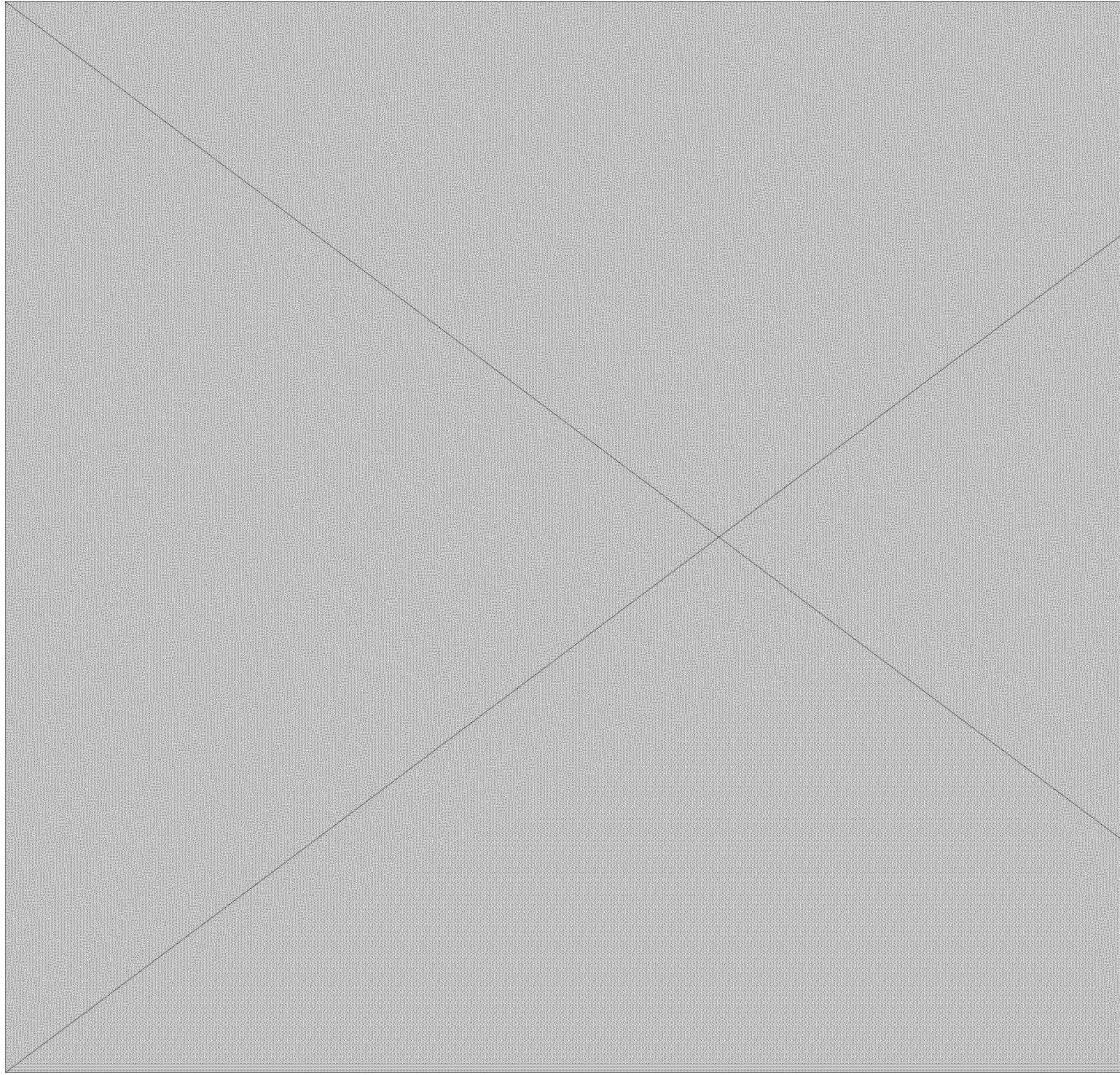
Brian

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From: [http://rapidcityjournal.com/news/local/communities/hot-springs/dewey-burdock-project-takes-another-step-forward/article\\_d07ed906-d1e4-11e6-ae0f-5f466e90fbb9.html](http://rapidcityjournal.com/news/local/communities/hot-springs/dewey-burdock-project-takes-another-step-forward/article_d07ed906-d1e4-11e6-ae0f-5f466e90fbb9.html)

# Dewey Burdock project takes another step forward

By John D. Taylor  
Updated Jan 3, 2017



This is one of the locations involved in the Dewey Burdock in-situ uranium mining project Powertech, a subsidiary of Azarga Uranium, wants to use. The project would be located in Fall River and Custer counties, northwest of Edgemont.

Powertech head says ignoring the science behind the effort is a scare tactic, but others worry about the county becoming a 'toxic waste dump site'

HOT SPRINGS – Lindsey McLean, a biochemist and Rapid City businesswoman who has given seminars on health here in Hot Springs, says that if people against using Fall River County as a "toxic waste disposal site" can thwart Azarga Uranium's effort to permit in-situ uranium mining and using deep injection wells to store what she calls toxic waste at the Dewey-Burdock project site in Fall River and Custer counties, they can probably keep toxic waste out of the Black Hills altogether.

Meanwhile, Edgemont's Mark Hollenbeck, of Powertech (an Azarga subsidiary and the company that will take the Dewey Burdock project forward if federal and state agencies give it the go-ahead), says that those fighting against the Dewey Burdock project are using scare tactics to frighten people, that they aren't listening to a decade's worth of science behind what Powertech intends on doing at the site.

On Wednesday, Dec. 28, the Nuclear Regulatory Commission (NRC) appeared to agree – at least in part – with Hollenbeck.

The NRC's Atomic Safety and Licensing Board (ASLB) issued a "partial initial decision" that dismissed five of seven contentions those against the Dewey Burdock project said where valid reasons not to grant Azarga and Powertech a license to proceed, but it granted two other conditions.

### In-situ mining

In-situ uranium mining involves injecting a solution -- called a lixiviant -- into an underground uranium ore deposit using a high-pressure injection well. As the solution flows through the ore, the lixiviant dissolves -- leaches -- uranium into the solution. This solution is then pumped out of the ore deposit, where a separate well extracts the uranium from the solution, in an ion exchange process.

After the uranium is extracted, the lixiviant is recycled and reinjected into the ore body to dissolve more uranium.

The process is similar to the fracking process used to gather oil or natural gas from underground deposits.

In-situ uranium mining is used widely throughout South Dakota, Wyoming, Nebraska and New Mexico to recover uranium for enrichment and later use in nuclear power plants.

### Waste problems?

The waste left over from in-situ mining -- Hollenbeck says this is half a percent of all the solution used to dissolve the uranium -- is injected back into the ground, into what he described as isolated saltwater- and oil-filled aquifers that also contain water not "fit for anything" like irrigation, livestock and certainly not for drinking water for people.

Hollenbeck described this waste as a "salty solution," much like brine, a by-product of fracking and oil and natural gas production, which is also pumped back underground by deep injection wells.

Hollenbeck said this waste solution is not radioactive. It has radio nuclides in it, but it is not classified as a radioactive waste. Again, he said the same sort of waste occurs in fracking oil production methods.

He called the deep injection wells a "modern disposal method," one of two potentials to dispose of this waste: using deep injection wells or applying it to land.

"We've done exhaustive science studies on this," he said, "geology tests, hydrologic tests, pressure tests, other tests. We've tested the aquifers above and below it. We have confidence in this."

"I'm extremely frustrated," he said, "the detractors (those against the Dewey Burdock project) have nothing at stake, nothing to lose, and they are usually misrepresenting the facts. My family has been here (in Edgemont) for several generations, we have a stake in this. You wouldn't just drill a hole and pump waste into it."

McLean and others heartily disagree with Hollenbeck's characterization of the waste going back into the ground.

McLean says that the Black Hills is one of the last sources of basically pure aquifers available between the Rocky Mountain front and the more stable underground structures of the Great Plains and prairie further east. She and other groups fighting against bringing toxic waste into the Black Hills -- including Hot Springs' It's All About The Water -- are embarking on a massive "public education campaign" about what is intended by Azarga at the Dewey Burdock site, and how this will affect the Black Hills and its precious water supplies.

She says there are four basic aquifers that encircle the Black Hills at different depths:

- The Inyan Kara aquifer, the shallowest often used for irrigation and livestock use.
- The Deadwood Aquifer, below Inyan Kara, is a supply of unusable water.
- The Madison Aquifer is the main drinking water supply in the Black Hills.
- The Minnelusa Aquifer, the deepest aquifer, also used for irrigation, livestock and human use.

McClean and others believe deep injection wells will cause trouble for a variety of reasons:

•One issue is the nature of Black Hills geology. The hills formed through an uplift of the Earth's crust, and as a result, underlying rock structures are broken, bent and fractured. This allows connectivity between aquifers on different levels, she said. McLean and others worry that what gets dumped into one aquifer could very well make it into other aquifers -- into drinking water. In particular, McLean worries about how the Madison Aquifer, the major drinking water source for the Black Hills, lies in between the Deadwood and Minnelusa aquifers, and how what is dumped into Deadwood or Minnelusa could find its way into the Madison because it is under pressure from both above and below.

•Related to this is how deep injection wells work. Deep injection wells use high pressure to force the waste and water into the aquifer. This pressure, says McLean, works exactly like the fracking technique used by the oil and natural gas industry to drive pockets of oil or natural gas out of shale. It breaks rocks, creates additional fissures for waste to reach another aquifer. Related to this is how fracking, considered to be the cause of numerous recent Oklahoma earthquakes, is a concern. Since the Black Hills is already in an earthquake-prone area, high pressure injection of waste, causing rock strata to break, could result

in more shifting of bedrock, more fissures and breaks, more of a chance of contaminating clean water with toxic chemicals, said McLean.

- The pipes and well casings that carry the waste into the underground aquifers are also suspect, McLean says. Injection wells use steel well pipes, encased in concrete, to punch down through rock and sediment layers of the Earth. This journey takes the pipe through the Inyan Kara and the Madison aquifers to reach either the Deadwood or Minnelusa levels. The corrosive nature of salty waste being injected into them will cause them to break down faster than predicted and the protection the pipes and concrete offer will then be lost, resulting in potential contamination of aquifers like the Madison, she says.

- Also, McLean worries about the impact of more than 7,600 uncovered bore holes, the result of uranium exploration in the past. Azarga was supposed to cover these, but has not completed this effort, according to McLean – although the company claims otherwise. This could leach toxic waste into the Inyan Kara aquifer, she said. By NRC rules these holes are to be identified and properly closed before any mining activity would be permitted.

- If there is contamination of drinking water from in-situ waste water, McLean said, heavy metals like thorium, vanadium, strontium and others could become even twice as toxic due to their being part of a radioactive slurry of chemicals. Also, salts and other chemicals used in the in-situ process and injected into the Earth contain salts that can dissolve rock like sandstone, potentially opening up more ways for a clean aquifer to become contaminated.

- McLean says that eight of the 12 deep injection wells to be used in Dewey Burdock are Class No. 5 wells, four are Class No. 3 wells. The Class No. 3 wells would shoot in-situ waste down into the Deadwood Aquifer, already bad water, not fit for even livestock, according to McLean. The Class No. 5 wells would pump a far less polluted level of waste into the Minnelusa Aquifer – which is a source of drinking water for many in the Black Hills, including McLean. She would like an “exact description of the kinds and concentrations of all wastes to be injected” in both Class No. 3 and No. 5 injection wells, with the exact locations and depths of these wells. According to McLean, there are more than 700 leases for in-situ type projects currently located across the Black Hills, plenty of cause for concern, she noted.

#### ASLB decision

The NRC and its ASLB must comply with National Environmental Policy Act (NEPA) obligations when permitting in-situ mining. As a result, the ASLB prepared a generic environmental impact statement (GEIS) to address certain aspects of the environmental analysis for the Dewey Burdock project. The GEIS identified “resource areas that require site-specific information to fully analyze the environmental impacts.”

Back in 2009, Powertech filed an application to permit the Dewey Burdock project. Responding to this, the Oglala Sioux Tribe and “Consolidated Interveners” including several environmental groups, challenged this license application.

Various hearings took place, with ASLB issuing draft and final environmental impact statements, and a safety evaluation report, with the NRC issuing a license to proceed to Azarga/Powertech in 2014. This was opposed by the interveners as well.

On Wednesday, Dec. 28, ASLB resolved five of seven contentions put forth by those against Dewey Burdock in favor of Powertech. ASLB also found deficiencies in the NRC’s NEPA analysis and National Historic Preservation Act consultation with the Oglala Sioux Tribe, particularly regarding tribal “cultural resources.” Plus, ASLB requires Azarga to address the uncovered bore holes issue. Still, ASLB upheld Powertech’s license.

This appears to be a big win for Azarga/Powertech, because ASLB said the EIS did contain enough background information about groundwater resources, about geological and manmade features that could permit groundwater migration.

McLean, who has testified against Azarga in hearings held in Rapid City and elsewhere, says that the U.S. Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC) are looking at Dewey Burdock as a test case. If Azarga can be stopped with its plans here, people can keep toxic, radioactive waste out of the Black Hills in general.

She claims the NRC, due to budget cuts, must now survive as a federal agency from money acquired during the permitting process, which is why so many decisions by NRC favor corporations and industry groups like Azarga. She is looking forward to the EPA’s decisions on this.

#### Money problems

Still, one of Azarga’s biggest problems in moving forward at Dewey Burdock is the price of uranium. It has plummeted in recent years. Uranium currently fetches about \$18 per pound. To make in-situ mining break even, Azarga’s Chief Operating Officer John Mays has admitted that uranium needs to sell for at least \$63 per pound. With nuclear power declining in favor of cleaner solar and wind energy, the demand for uranium is not likely to skyrocket any time soon.

“The economics are not possible right now,” Hollenbeck agreed. “At \$18 per pound, no investors are going to get involved. But with the phenomenal time it takes to go through the permitting process, we have to stay with this.”

McLean claims Azarga is looking at alternative ways to make Dewey Burdock profitable – and keep uranium mining permits alive, just in case prices increase again – that Azarga wants to use its deep injection wells to pump wastewater from other in-situ uranium mining efforts in Nebraska and Wyoming into Fall River County aquifers.

Hollenbeck disputed that. He said the deep injection wells are part of the on-site in-situ process.

“We’ve spent 10 years doing this and poured an obscene amount of money into this,” he said. “Everything points to our science being right. Every time the interveners have gone up against us, they’ve lost on the science of this.”

As an example, Hollenback pointed out how a map showing uranium deposits on the eastern flank of the Black Hills is blown out of proportion.

“Even when uranium was getting \$130 per pound 10 years ago, no one leased these sites,” he said. “It’s not recoverable. They just want to get people scared. Rapid City has the largest open pit mine in South Dakota.”

Yet Azarga’s financial dealings have been increasingly questioned.

Not too long ago, Azarga sold stock for \$10 - 12 per share to raise about \$435 million. This summer it embarked on another stock-selling effort, to raise another couple million to get funding for NRC-required amendments the company proposed to the NRC Source and Byproduct Materials License for the Dewey Burdock project.

This, according to Azarga “completes certain NRC license conditions for the Project, including the finalization of the financial assurance amount required for construction of the Project” and “completion of other initial pre-operational NRC license conditions. The Amendment also completes one of the necessary steps for resuming the South Dakota state permitting process.”

While stock values rise and fall – sometimes precipitously – Azarga’s once valuable shares are now trading for pennies after seven executives of Platinum Partners who owned 20 percent of Azarga, the company’s largest stockholder, were charged with investment and security fraud, also conspiracy, last week in a \$1 billion case that federal prosecutors describe as a Ponzi scheme.

Platinum, led by Mark Nordlicht, was known for high stock returns, the result of aggressive investing and fund management. However, Brooklyn-based U.S. Attorney Robert Capers alleges that Nordlicht and his cohorts engaged in “one of the largest and most brazen investment frauds perpetrated on the investing public.” The charges include exaggerating the value of their investments, paying some clients ahead of others and rigging a bond vote in their favor.

Will this play a role in the required bonding to mitigate potential damages caused by Azarga’s plans?

Hollenbeck said he couldn’t comment on Azarga’s other financial dealings because he works for Powertech, and a call to John Mays, Azarga’s Chief Operating Officer, went unanswered.